MONTANA FISH, WILDLIFE & PARKS
FINAL PERFORMANCE REPORT

STATE: **MONTANA**
GRANT TITLE: **Glacier National Park Wolverine Ecology Project**
AGREEMENT: **T - 32 - R - 1**
PERIOD COVERED: **May 29, 2006 through December 31, 2006**

Objective

To monitor wolverine movement and reproductive activity of females at den sites within and around Glacier National Park.

Location

The project will be conducted in and around Glacier National Park, depending on the movements and distribution of study animals.

Accomplishments

During the 2005-2006 animal capture season, 3 wolverines were fitted with GPS collars programmed to attempt fixes at 5-minute intervals. Although batteries on these systems only last approximately 8 days, our high recapture rate in GNP allows us to download collars and replace batteries for additional data collection. We acquired 7 such datasets (Figure 1), which will be used to investigate fine-scale movement, foraging, and habitat relationships. A notable feature of the 5 minute tracks was the animal's tendency to move long distances and then cluster around specific sites, assumed to be foraging sites. Through the 2006 summer and fall, technicians investigated over 60 such clusters across Glacier National Park (Figure 2). Foraging activity was recorded along with site characteristics and specific habitat features.

Two kits were captured at a den in early May (Figure 3). The kits were both females and were instrumented with implant transmitters. They were monitored throughout the year to document survivorship, the use of rendezvous sites (sites where the kits are left by their mother while she forages), and association with their mother and/or other wolverines. In August, one of the kits was found dead. Investigation of the scene suggested she had fallen off a cliff. The project has captured and instrumented 3 litters of kits (6 individuals) since project beginning. To date, none of the kits have survived to adulthood. In addition to the female kit's death this year, 1 was killed outside the park by a hound hunter, 2 died of unknown causes, and the fifth by an undetermined predator.

Three additional traps were built to augment capture efforts in 2007. We plan to expand trapping to the southern border of the park as well as reopen traps in the Two Medicine, Cut Bank, and Avalanche areas.

Variances

No variances have occurred.

Expenditure Recap:

Proposed:

	Federal Share		Match		Total
Direct Costs	15,000.00		5,802.00		20,802.00
Indirect Costs @ 16.04%	2,406.00				2,406.00
Total	17,406.00	75.0%	5,802.00	25.0%	23,208.00

Actual:

	Federal Share		Match		Total
Direct Costs	15,000.00		5,802.00		20,802.00
Indirect Costs	2,406.00				2,406.00
Total	17,406.00	75.0%	5,802.00	25.0%	23,208.00

Expenditure Detail:

Contracted Services - $15,000.00

Project Personnel

		* Area code (406)	
Jeff Copeland	Principal Investigator	542-4165	jpcopeland@fs.fed.us
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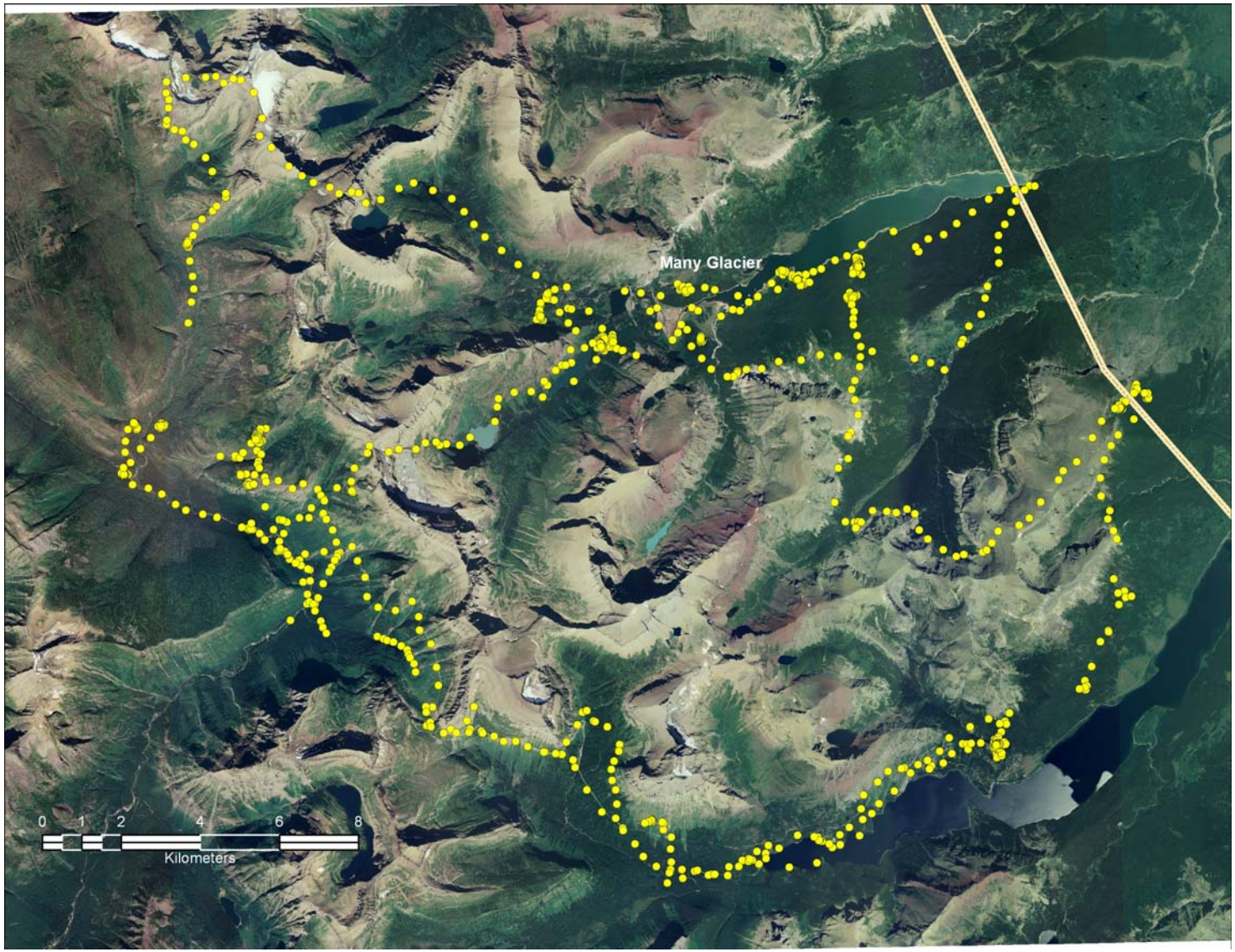

Figure 1. GPS data from adult male wolverine in Glacier National Park, February, 2006. The yellow dots represent the individual's track (consecutive points are spaced approximately 300 meters apart) at 5 minute intervals. During the course of the 8-day period, the individual traveled approximately 150 kilometers.

Figure 2. Clusters of GPS points identify location of a wolverine foraging site. The adult male wolverine visited the site at least 3 times during the 2005-2006 winter, and appeared to collect pieces of a bighorn sheep carcass and transport them up hill to a cliff area where pieces were eaten or cached.

Figure 3. 12-week-old wolverine kit captured at den site in May, 2006